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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HUANG, MEI QI	
ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,009	SENGUPTA ET AL.	
	Examiner	Art Unit	
	Mei Q. Huang	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *29-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-28* is/are rejected.

7)☒ Claim(s) *11* is/are objected to.

8)☒ Claim(s) *1-33* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05 April 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-28, drawn to compositions for thickening hydrophobic liquids and a method of making the composition, classified in class 556, subclass 400.

   II. Claims 29-33, drawn to a method of use the composition for thickening hydrophobic liquids, classified in class 424, subclass 1+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can be used in a materially different process, such as a process for antistatic treatment of resin.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. This application contains claims directed to the following patentably distinct species of the claimed invention: various layered silicate material described in Claim 6; various comonomers that generate hydrophilic homopolymers described in Claim 12 and various comonomers that generate hydrophobic homopolymers described in Claim 13.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, Claims 1, 2, 4, 6, 8-10, 14-16, 18-21, 23, 25, and 27 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

7. During a telephone conversation with Attorney, Mr. James J. Napoli on March 1, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-28, wherein the elected species are smectite clay for the layered silicate material from Claim 6, poly(ethylene glycol) as a first comonomer for the amphipathic copolymer from Claim 12, and poly(hydroxystearate) as a second comonomer for the amphipathic copolymer from Claim 13. Affirmation of this election must be made by applicant in replying to this Office action. Claims 29-33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

9. Claim 11 is objected to because of the following reason: the trade name, BIS-PEG 15, does not properly identify a particular material or product. A name of the chemicals is required to added. Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1-9 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finlayson (US Pat. 4,208,218) in view of Wong et al. (US Pat. 4,830,945).

The prior art to Finlayson discloses an organoclay rheological additive for non-aqueous fluid systems. As to Claim 1, Finlayson admits that organo modified clays can be used to produce rheological agents used in non-aqueous fluid systems which often contain finely divided suspended materials, such as pigments and the like, to thicken

the system (column 1, line 5-15). Finlayson discloses that smectite-type clays can be used (column 2, line 1-16), which meets the limitation of layered silicate material. Finlayson uses quaternary ammonium compounds as the surface modifier for the bentonite, a silicate material (column 2, line 20-55)), which is different from applicant's surface modifier, an amphipathic copolymer. The prior art to Wong et al. teaches that when resin particles having amphipathic copolymer moieties physically or chemically attached to them are dispersed in a liquid medium, the copolymers function as steric stabilizers by overcoming mutually attractive forces between the particles in the solution and the particle thereby maintained separate and prevented from flocculating (column 7, line 27-36). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to alter the organic surface modifier, i.e. use an amphipathic copolymer, as taught by Wong et al., to modify the surface of Finlayson's silicate material in order to take the advantage of the amphipathic copolymers being able to function as steric stabilizers, as taught by Wong et al. (column 7, line 27-37).

As to the limitation of "thickening hydrophobic liquids" required by Claim 1, it is examiner's position to treat this limitation of a special capability of the composition as an intended use of the composition. The recitation of a new intended use for an old product does not make a limitation in a claim to be product patentable. See *in In re Schreiber*, 128F. 3d 1473, 1477,44 USPQ 1429, 1431 (Fed. Cir. 1997).

As to the limitation of "an amphipathic copolymer prepared from ..." in Claim 1, it is noted that the limitation is a product-by-process limitation. Even though product-by-process limitation in a claim is defined by the process, determination of patentability is

based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process in the limitation of a claim is the same as or obvious from a product of the prior art, the limitation in the claim is unpatentable even though the prior art product was made by a different process. *In re Thorpe,* 777 F. 2d 695,698, 277 USPQ 964, 966 (Fed. Cir. 1985). Since Wong's amphipathic copolymer is substantially identical to that of the applicant's, applicant's process is not given patentable weight in this claim.

As to Claims 2-3, Finlayson also admits that some organophilic clays require solvent activators to be added to the system to produce the reological effect, which reads on the limitation of thickening aid in Claim 2. Finlayson exemplifies the solvent activators, such as water (column 4, Example 1), which reads on Claim 3.

As to Claims 4-5, as discussed in the rejection made for Claim 1 previously, this limitation is treated as an intended use of the composition. The recitation of a new intended use for an old product does not make a limitation in a claim as well as the dependent claims to be product patentable. See *in In re Schreiber*, 128F. 3d 1473, 1477,44 USPQ 1429, 1431 (Fed. Cir. 1997).

As to Claims 6-7, Finlayson discloses that smectite clays including bentonite, hectorite, saponite, and stevensite clays (column 2, line 1-6).

As to Claims 8-9, Wong et al. teach that the stabilizing copolymers, i.e. amphipathic copolymers, include block copolymers and graft copolymers (column 7, line 55-68), which reads on applicant's claim 8. As to Claim 9, since the Wong et als' copolymers are substantially identical to the claimed copolymers, it is the examiner's

position to believe that the prior art copolymers must inherently possess the same properties, such soluble or dispersible in hydrophobic liquids having a dielectric constant of less than about 10, as required by Claim 9. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to the applicant to establish an unobviousness difference. *In re Best,* 562 F.2d 1252, 195 USPQ 430 (CCPA 1977); *In re Fitzgerald,* 205 USPQ 594 (CCPA 1980).

As to Claim 14, Finlayson teaches that the organophilic clay gellant is employed in amounts sufficient to obtain the desired rheological properties such as high viscosity at low shear rates, control of sagging of fluid films and prevention of setting and hard packing of pigments present in the fluid compositions. Amounts of the orgnophilic clay gellant employed in the non-aqueous fluid system should preferably be between about 0.1% and about 5.0% based on the weight of the treated non-aqueous fluid system (column 4, line 3-10), which covers applicant's range converted as follow, divided the sum of lower ends of layered silicate and copolymer, (0.5+0.025), by the weights of hydrophobic liquid (30 and 90), respectively, i.e. 0.58-1.75 wt%. Finlayson also teaches that 1500 grams of bentonite clay needs 39.3 grams of modifier, i.e. the modifier used per 100 parts by weight of bentonite clay is 2.62 parts by weight (column 4, Example 1), which is higher than applicant's lowest weight percentage requirement for modifier per 100 parts by weight of silicate material, 0.025/70, i.e. 0.036 wt%, and lower than applicant's highest weight percentage requirement for modifier per 100 parts by weight of silicate material, 50/70, i.e. 71 wt%

As to Claim 15, Finlayson discloses that the solvent activator, if used, is in an amount of 0.21 wt% based on the weight of the surface modified silicate material (column 4, Table I), which is higher than applicant's lowest usage for the thickening aid per 100 parts by weight of the surface-modified silicate material, 0.025/(50+70), i.e. 0.021 wt%, and lower than applicant's highest usage for the thickening aid per 100 parts by weight of the surface-modified silicate material, 20/(50+70), i.e. 17 wt%.

As to Claims 16-17, Finlayson teaches that titanium dioxide can be added in an amount of 325 grams, i.e. 21 parts by weight per 100 parts by weight of surface-modified silicate material (column 4, Table I), which is higher than applicant's lowest weight percentage requirement for the functional particulate material per 100 parts by weight of the surface-modified silicate material, 0.1/(50+70), i.e. 0.083 wt%, and lower than applicant's highest weight percentage requirement for the functional particulate material per 100 parts by weight of the surface-modified silicate material, 50/(50+70), i.e. 41.6 wt%.

As to Claim 18, Finlayson teaches that having 1500 grams of bentonite in water, combining with 39.3 grams of modifier and stirring the mixture for 45 minutes (column 4, Example 1), which reads on the method limitations in Claim 18.

13. Claims 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finlayson (US Pat. 4,208,218) in view of Wong et al. (US Pat. 4,830,945) and further in view of Adams et al. (US Pat. 6,649,138).

The references to Finlayson and Wong et al. are adequately presented in paragraph 12 previously in this office action and are incorporated herein by reference. As to Claim 10, Finlayson discloses a silicate material surface-modified by an ammonium compound. Wong et al. disclose amphipathic copolymers which can be used as a modifier, i.e. stabilizing copolymer. The comonomers used by Wong et al. to make the amphipathic copolymer are different from applicant's. The prior art to Adams et al. teaches a amphipathic dispersant used to modify the surface of nanoparticles wherein the amphipathic compound has two or more hydrophobic regions and two or more hydrophilic regions (column 13, line 34-37). Adams et al. further teach that these copolymers can be triblock copolymers and such triblock copolymer provides a region rich in hydrophobic/hydrophilic side chains (column 17, line 55-59), which reads on applicant's claim 10. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a triblock copolymer, as taught by Adams et al., in combine with Wong et als' amphipathic copolymer, as a surface modifier system in Finlayson's layered silicate material, in order to take the advantage of the amphipathic copolymers being able to function as steric stabilizers, as taught by Wong et al. (column 7, line 27-37) and be benefited from triblock copolymer which provides a region rich in hydrophobic/hydrophilic side chains, as taught by Adams et al. (column 17, line 55-59).

As to Claims 12-13, the discussion of the references to Finlayson and Wong et al. on Claim 1 are presented in paragraph 11 of this office action and is incorporated herein by reference. Adams et al. teach that the hydrophilic regions of the amphipathic

copolymer may be composed of poly(ethylene glycol) (column 15, line 36-38), which reads on applicant's claim 12. Adams et al. also teach that the hydrophobic regions of the amphipathic copolymer may be composed of 12-hydroxystearic acid (column 16, line 4-11), which reads on applicant's claim 13. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include these comonomers, as taught by Adams et al., in making Wong et als' amphipathic copolymers, to modify the surface of Finlayson's silicate material in order to use more different comonomers in making the surface modifier, i.e. amphipathic copolymer, in a reasonable expectation of success.

14. Claims 19-25 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finlayson (US Pat. 4,208,218) in view of Wong et al. (US Pat. 4,830,945) and further in view of Fonsny (US Pat. 4,846,992).

The references to Finlayson and Wong et al. are adequately presented in paragraph 12 previously in this office action and are incorporated herein by reference. Finlayson discloses a silicate material surface-modified by an ammonium compound. Wong et al. disclose amphipathic copolymers which can be used as a modifier, i.e. stabilizing copolymer. Finlayson also admits that some organophilic clays require solvent activators to be added to the system to produce the reological effect. Finlayson exemplifies the solvent activators, such as water (column 4, Example 1). Finlayson does not use hexylene glycol as a solvent activator as required by the instant claim 19. The prior art to Fonsny teaches an non-aqueous heavy duty laundry detergent

composition comprising organophilic modified clay. Fonsny teaches that the composition may be advantageous to include an organic solvent or diluent which can function as a viscosity control and gel-inhibiting agent for the liquid nonionic surface active agents, such organic solvent includes hexylene glycol (column 6, line 39-45). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use this organic solvent, i.e. hexylene glycol, as taught by Fonsny, in making Wong et als' amphipathic copolymers, to modify the surface of Finlayson's silicate material in order to take advantage of such organic solvent being able to control viscosity, as taught by Fonsny (column 6, line 39-45).

As to the limitation of "thickening hydrophobic liquids" required by Claim 19, it is examiner's position to treat this limitation of a special capability of the composition as an intended use of the composition. The recitation of a new intended use for an old product does not make a limitation in a claim to be product patentable. See *in In re Schreiber*, 128F. 3d 1473, 1477,44 USPQ 1429, 1431 (Fed. Cir. 1997).

As to the limitation of "an amphipathic copolymer prepared from ..." in Claim 19, it is noted that the limitation is a product-by-process limitation. Even though product-by-process limitation in a claim is limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process in the limitation of a claim is the same as or obvious from a product of the prior art, the limitation in the claim is unpatentable even though the prior art product was made by a different process. *In re Thorpe,* 777 F. 2d 695,698, 277 USPQ 964, 966 (Fed. Cir.

1985). Since Wong's amphipathic copolymer is substantially identical to that of the applicant's, applicant's process is not given patentable weight in this claim.

As to Claims 20-22, as discussed in the rejection made for Claim 19 previously, this limitation is treated as an intended use of the composition. The recitation of a new intended use for an old product does not make a limitation in a claim as well as the dependent claims to be product patentable. See *in In re Schreiber*, 128F. 3d 1473, 1477,44 USPQ 1429, 1431 (Fed. Cir. 1997).

As to Claims 23-25 and 27-28, the rejections made for Claims 6, 7, 9, 14-17 described previously in paragraph 11 of this office action would be applied herein to reject Claims 23-25 and 27-28.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Finlayson (US Pat. 4,208,218) in view of Wong et al. (US Pat. 4,830,945), further in view of Fonsny (US Pat. 4,846,992), and further in view of Adams et al. (US Pat. 6,649,138).

The discussion of the prior arts to Finlayson, Wong et al. and Fonsny on Claim 19-20 and 25 are presented in paragraph 13 above and is incorporated herein by reference. Finlayson discloses a silicate material surface-modified by an ammonium compound. Wong et al. disclose amphipathic copolymers which can be used as a modifier, i.e. stabilizing copolymer. Fonsny discloses hexylene glycol, which can be used to dilute a composition comprising organophilic-modified clay. These references are silent as of amphipathic copolymer comprising a triblock copolymer, which is

disclosed by Adams et al. as discussed previously in this office action, in paragraph 12. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a triblock copolymer, as taught by Adams et al., in combine with Wong et als' amphipathic copolymer, as a surface modifier system in Finlayson's layered silicate material, and dilute in hexylene glycol, as taught by Fonsny, in order to take the advantage of the amphipathic copolymers being able to function as steric stabilizers, as taught by Wong et al. (column 7, line 27-37), be benefited from triblock copolymer which provides a region rich in hydrophobic/hydrophilic side chains, as taught by Adams et al. (column 17, line 55-59), and also take the advantage of hexylene glycol being able to control viscosity, as taught by Fonsny (column 6, line 39-45).

Allowable Subject Matter

Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The instant claim is allowable over closest reference to Adams et al. (US Patent 6,649,138). The disclosure includes triblock copolymer of aspartate and norleucine in the prior art composition.

Conclusion

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure. The following references have been cited to show the state of

the art with respect to the study of the organophilic clay and amphipathic copolymer as a surface modifier.

US Patent 5,879,589 to Miyanaga et al.

US Pub. 2003/0027872 to Chaiko

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mei Q. Huang whose telephone number is (571) 272-3549. The examiner can normally be reached on 8am - 4pm, Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mei Q. Huang
Patent Examiner

March 25, 2005

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